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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,311	01/31/2002	Kyung Chul Woo	3449-0190P	5488
2292	7590	01/28/2005		
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER JAGAN, MIRELLYS	
			ART UNIT 2859	PAPER NUMBER

DATE MAILED: 01/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/059,311

Applicant(s)

WOO ET AL.

Examiner

Mirellys Jagan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 1, 2, and 8-10 are objected to because of the following informalities:

In claim 1, there is lack of support in the specification for neither the water gauge chamber nor the hollow cap projecting below a bottom side of the outer tub, e.g., see figure 1(b), which shows the water gauge chamber (12) and the cap (13) projecting below a bottom side of the tub.

In claim 9, there is lack of support in the specification for the cylindrical upper portion of the outer tub having an edge, as claimed in claim 9, e.g., see figure 1(b), which shows the outer tub being a unitary structure, i.e., a cylindrical 'upper portion' that is integral with the 'lower portion', and not having an 'edge'.

Claims 2 and 8, and 10 are objected to for being dependent on an objected base claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent 62192196 to Yamamoto et al [hereinafter Yamamoto].

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Yamamoto discloses a washing machine having:

a water temperature measuring sensor (18) and signal lines for connecting the sensor to a circuit for measuring a temperature of water;

a water gauge chamber (14) extending along an outer side of an outer edge of an outer tub (2) of the washing machine; and

a hollow chamber cap (17) that is located at a bottom edge of the water gauge chamber to close an opened bottom portion of the gauge chamber, the cap having a flat disk-shaped upper side, wherein substantially an entire upper surface of the of the upper side is exposed to the water;

wherein a lower surface of the upper side is formed with a recess serving as a seating portion in which is mounted the temperature measuring part so that the temperature of the water is measured without the sensor directly contacting the water; the water gauge chamber does not project below a bottom side of the tub; and a hollow space of the cap faces downward and the water in the gauge chamber is above the cap.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of U.S. Patent 5,743,646 to O'Connell et al [hereinafter O'Connell].

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Yamamoto discloses a machine having all of the limitations of claim 4, as stated above in paragraph 3, except for the cap having a heat insulating material inserted into its hollow space to maintain the sensor within the cap and provide an adiabatic effect.

O'Connell discloses a temperature sensor for measuring temperature within a chamber. The temperature sensor is in a hollow probe that is filled with a heat insulating material. O'Connell teaches that it is beneficial to fill the probe with the material in order to maintain the sensor in place and provide efficient heat transfer (adiabatic effect) for faster response of the sensor (see column 3, lines 18-34).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the machine of Yamamoto by filling the hollow interior of the cap with a heat insulating material, as taught by O'Connell, in order to maintain the sensor in place and provide efficient heat transfer for faster response of the sensor.

6. Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto.

Yamamoto discloses a washing machine having:

a water temperature measuring sensor (18) and signal lines for connecting the sensor to a circuit for measuring a temperature of water;

a water gauge chamber (14) extending along an outer side of an outer edge of a cylindrical outer tub (2) of the washing machine; and

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a hollow chamber cap (17) that is located at a bottom edge of the water gauge chamber to close an opened bottom portion of the gauge chamber, the cap having a flat disk-shaped upper side,

wherein a lower surface of the upper side is formed with a recess serving as a seating portion in which is mounted the temperature measuring part; the water gauge chamber does not project below a bottom side of the tub; and a lower portion of a side of the cylindrical outer tub is tapered inwardly toward a bottom of the outer tub (see figures 2 and 3).

Yamamoto does not disclose the cap not projecting below a bottom side of the tub, and the lower portion of the cylindrical outer tub having the claimed shape, i.e., a truncated conical-shaped lower portion tapered inwardly toward a bottom of the outer tub such that the cap is separated from the cylindrical upper portion by a vertical length of the lower portion.

Referring to claim 1, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the shape of the cap disclosed by Yamamoto so that it not projecting below a bottom side of the tub in order to allow a user to seal the bottom of the cap to the bottom of the water gauge chamber to prevent water from seeping out from the bottom of the washing machine, and since the shape of the cap of the washing machine claimed by applicant, i.e., not projecting below a bottom side of the tub, is only considered to be obvious modifications of the shape or configuration of the cap of the washing machine disclosed by Yamamoto as the courts have held that a change in shape or configuration without any criticality is within the level of skill in the art since the particular shape claimed is nothing more than one of numerous shapes that a person having ordinary skill in the art would have been able to provide

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using routine experimentation based on its suitability for the intended use of the invention. See

In re Dailey, 149 USPQ 47 (CCPA 1976).

Furthermore, referring to claim 9, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the shape of the cylindrical outer tub of the washing machine disclosed by Yamamoto so that it tapers inward away from the temperature sensor in order to allow more water to surround the temperature sensor of the cap and obtain a more accurate measurement of the water, and since the shape of the cylindrical outer tub of the washing machine claimed by applicant, i.e., having a conical-shaped lower portion tapered inwardly toward the bottom of the tub, is only considered to be obvious modifications of the shape or configuration of the cylindrical outer tub of the washing machine disclosed by Yamamoto as the courts have held that a change in shape or configuration without any criticality is within the level of skill in the art since the particular shape claimed is nothing more than one of numerous shapes that a person having ordinary skill in the art would have been able to provide using routine experimentation based on its suitability for the intended use of the invention. See *In re Dailey*, 149 USPQ 47 (CCPA 1976).

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of O'Connell.

Yamamoto discloses a machine having all of the limitations of claim 2, as stated above in paragraph 6, except for the cap having a heat insulating material inserted into its hollow space to maintain the sensor within the cap and provide an adiabatic effect.

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O'Connell discloses a temperature sensor for measuring temperature within a chamber. The temperature sensor is in a hollow probe that is filled with a heat insulating material. O'Connell teaches that it is beneficial to fill the probe with the material in order to maintain the sensor in place and provide efficient heat transfer (adiabatic effect) for faster response of the sensor (see column 3, lines 18-34).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the machine of Yamamoto by filling the hollow interior of the cap with a heat insulating material, as taught by O'Connell, in order to maintain the sensor in place and provide efficient heat transfer for faster response of the sensor.

8. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto.

Yamamoto discloses a machine having all of the limitations of claims 8 and 10, as stated above in paragraph 6, but is silent as to the manner in which the cap is attached to the chamber, and the particular material of the cap, and therefore does not disclose the cap being welded to the bottom edge of the chamber, and the cap being made of a plastic material.

Referring to claim 8, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cap disclosed by Yamamoto by welding the cap to the chamber in order to more securely seal the opening at the bottom of the chamber and prevent water from leaking out.

Referring to claim 10, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the machine disclosed by Yamamoto by making

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the cap of a plastic material in order to use a less expensive material or a material that is resistant to corrosion, and since the particular type of material claimed by applicant is considered to be the use of a “preferred” or “optimum” material out of a plurality of well known materials that a person having ordinary skill in the art at the time the invention was made would have been able to provide based on the intended use of applicant’s apparatus, i.e., suitability for the intended use of applicant’s apparatus, which in this case is to provide a housing for a temperature sensor to measure the temperature of water in a washing machine. See *In re Leshin*, 125 USPQ 416 (CCPA 1960), where the courts held that a selection of a material on the basis of suitability for intended use of an apparatus would be entirely obvious.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto.

Yamamoto discloses a washing machine having:

a water temperature measuring part (18) including a temperature sensor and signal lines for connecting the sensor to a circuit, and a cylindrical probe part of the cap containing the temperature measuring part therein and extending upward from the cap to directly contact the water;

an outer tub (2) having a bottom that is substantially flat, a side that is substantially cylindrical, and a truncated tapered portion between the bottom and side;

a water gauge chamber (14) extending along a portion of an outer surface of the cylindrical side and the tapered portion; and

a hollow chamber cap (17) that is located at a bottom edge of the water gauge chamber such that it does not contact the cylindrical side (see figures 2 and 3).

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Yamamoto does not disclose the cap and the probe being made of two separate parts such that the probe extends through a hole in the cap to contact the water, or the outer tub being shaped as claimed, i.e., the truncated tapered portion being conical-shaped such that the cap makes no contact with the tapered portion.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cap disclosed by Yamamoto by making the cap of two separate parts such that the probe extends through a hole in the cap to contact the water in order to allow the length of the probe within the water to be adjustable, thereby maintaining the sensor within the water level of a particular machine, and since it has been held that the mere fact that a given structure is integral does not preclude its consisting of various elements. See Nerwin v. Erlichman, 168 USPQ 177, 179 (PTO Bd. of Int. 1969). Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the shape of the cylindrical outer tub of the washing machine disclosed by Yamamoto so that it is cylindrical-shaped and tapers inward away from the temperature sensor in order to allow more water to surround the temperature sensor of the cap and obtain a more accurate measurement of the water, and since the shape of the cylindrical outer tub of the washing machine claimed by applicant, i.e., having a conical-shaped lower portion tapered inwardly toward the bottom of the tub, is only considered to be obvious modifications of the shape or configuration of the cylindrical outer tub of the washing machine disclosed by Yamamoto as the courts have held that a change in shape or configuration without any criticality is within the level of skill in the art since the particular shape claimed is nothing more than one of numerous shapes that a person having ordinary skill in the art would have been able to provide using routine experimentation

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based on its suitability for the intended use of the invention. See *In re Dailey*, 149 USPQ 47 (CCPA 1976).

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of O'Connell.

Yamamoto discloses a machine having all of the limitations of claim 6, as stated above in paragraph 9, except for the cap having a heat insulating material inserted into its hollow space to maintain the sensor with in the cap and provide an adiabatic effect.

O'Connell discloses a temperature sensor for measuring temperature within a chamber. The temperature sensor is in a hollow probe that is filled with a heat insulating material. O'Connell teaches that it is beneficial to fill the probe with the material in order to maintain the sensor in place and provide efficient heat transfer (adiabatic effect) for faster response of the sensor (see column 3, lines 18-34).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the machine of Yamamoto by filling the hollow interior of the cap with a heat insulating material, as taught by O'Connell, in order to maintain the sensor in place and provide efficient heat transfer for faster response of the sensor.

Response to Arguments

11. Applicant's arguments with respect to claims 1-6 and 8-10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mirellys Jagan whose telephone number is 571-272-2247. The examiner can normally be reached on Monday-Friday from 11AM to 4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJ
January 25, 2005



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